

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* JON A. CASEY, GOVINDARAJAN NATARAJAN,  
ROBERT W. PASCO and VINCENT P. PETERSON

---

Appeal No. 1998-1804  
Application 08/668,291

---

ON BRIEF

---

Before KIMLIN, PAK and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is an appeal from the examiner's refusal to allow claims 1-4, 6-17 and 19-27 as amended after final rejection. These are all of the claims remaining in the application.

*THE INVENTION*

The claimed invention is directed toward a method and apparatus for forming cavities in semiconductor substrates

(specification, page 1, lines 4-6). Claim 1, directed toward the method, is illustrative:

1. A method of forming a ceramic substrate having at least one cavity, the method comprising the steps of:

(a) placing at least one ceramic greensheet having at least one cavity over a first plate;

(b) placing a planar coated membrane sheet over said cavity, wherein said coated membrane sheet has an elongation of greater than 350% at room temperature and a modulus of less than 1 Gpa. and wherein said coated membrane sheet is selected from the group consisting of silicone-coated silicone rubber, silicone-coated polyurethane, silicone-coated polyethylene and silicon-coated copolymers of polyethylene and a second polyolefin;

(c) conforming said coated membrane sheet to said cavity;

(d) applying pressure to at least the coated membrane sheet and the at least one ceramic greensheet, said coated membrane sheet preventing the collapse of said cavity during this step of applying pressure.

#### *THE REFERENCES*

Thein et al. (Thein) 1992	5,108,532	Apr. 28,
Gauci et al. (Gauci) 1995	5,478,420	Dec. 26,
Johnstone 1996	5,520,763	May 28,
Natarajan et al. (Natarajan) 1996	5,538,582	Jul. 23,

(filed Sep. 14,

Appeal No. 1998-1804  
Application 08/668,291

1994)

#### *THE REJECTIONS*

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1-4, 6-8, 11, 13-17, 19-21, 24, 26 and 27 over Natarajan in view of Johnstone; claims 9, 10, 22 and 23 over Natarajan in view of Johnstone and Thein; and claims 12 and 25 over Natarajan in view of Johnstone and Gauci. Claims 26 and 27 also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellants regard as the invention.

#### *OPINION*

We dismiss the appeal as to claims 26 and 27 and, as to the other claims, reverse the rejection under 35 U.S.C. § 103.

#### *Rejection under 35 U.S.C. § 112, second paragraph*

A requirement of 37 CFR § 1.193(b)(1993) is that "[i]f the examiner's answer expressly states that it includes a new ground of rejection, appellant must file a reply thereto within two months from the date of such answer to avoid dismissal of the appeal as to the claims subject to the new

ground of rejection ...." The examiner's answer, which was mailed on November 26, 1997, expressly states (sixth page)<sup>1</sup> that the rejection of claims 26 and 27 under 35 U.S.C. § 112, second paragraph, as depending from canceled claims is a new ground of rejection, and further states (ninth page) that a reply to this rejection must be filed within two months to avoid dismissal of the claims so rejected. In a telephone conversation on November 13, 2001 between the appellants' counsel and a member of the board's clerical staff, it was confirmed that the appellants have not filed a response to the new ground of rejection. Accordingly, we dismiss the appeal as to claims 26 and 27.

*Rejection under 35 U.S.C. § 103*

We need to address only the independent claims, which are claims 1 and 14. These claims both require that a planar membrane sheet is coated with a silicone.

Natarajan discloses a method and apparatus for forming a ceramic substrate having at least one cavity, wherein a planar membrane sheet is placed over a cavity for subsequently being

---

<sup>1</sup>The pages of the examiner's answer are not numbered.

conformed to the cavity (col. 6, lines 20-26). Natarajan teaches that the membrane should be made of a non-sticky material so that the membrane does not stick either to the ceramic substrate or to any other fixture or item with which it comes into contact (col. 8, lines 11-15). The non-sticky membrane materials which are exemplified for use in cases where high elongation is desired include polyethylene (col. 8, lines 26-33), which is one of the membrane materials recited in the appellants' claims 1 and 14. Natarajan does not disclose a silicone-coated membrane.

Johnstone discloses a method for applying metallic foil to toner which has been printed on a substrate, wherein either the backing of the metallic foil is inherently of release material or there is a release layer of a material such as a silicone or polytetrafluoroethylene between the metallic foil and the backing (col. 4, lines 14-19). The side of the metallic foil opposite the backing has thereon a transfer adhesive (col. 4, lines 22-23). Because the foil has a much higher affinity to the adhesive than to the release material, when the adhesive engages the toner and heat and pressure are

applied to the backing, the adhesive and foil transfer to the toner (col. 4, lines 23-30).

The examiner argues that "[i]t would have been obvious to one of ordinary skill in the art to have employed a silicone coating on the membrane, as is conventional in the art and shown by Johnstone, in the method and apparatus of Natarajan in order to prevent undesired adhesion" (answer, fourth page). In the examiner's view, the "suggestion or motivation to combine [Natarajan and Johnstone] is provided by the desirability of improving the non-stick properties of the material disclosed by Natarajan by adding a non-stick coating as disclosed by Johnstone" (answer, seventh page).

In order for a *prima facie* case of obviousness to be established, the teachings from the prior art itself must appear to have suggested the claimed subject matter to one of ordinary skill in the art. See *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a *prima facie* case of obviousness.

Appeal No. 1998-1804  
Application 08/668,291

*See In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783  
(Fed. Cir. 1992).

Contrary to the examiner's assertion, Johnstone does not teach that it was conventional in the art to apply a silicone coating onto a membrane. What Johnstone teaches is that in the method disclosed therein for transferring metallic foil from the foil's backing to a toner, a release coating of a material which can be a silicone is needed between the foil and the backing if the backing is not inherently of release material. The examiner has not explained why, in view of the disclosure by Natarajan of non-sticky membrane materials and the lack of any indication by Natarajan that sticking is a problem when these materials are used, one of ordinary skill in the art would have been led by the applied references themselves to apply a coating of Johnstone's release material to Natarajan's membrane. The record indicates that the desirability of a non-stick coating on Natarajan's membrane comes from the appellants' disclosure of their invention in the specification rather than coming from the applied prior art and that, therefore, the examiner used impermissible hindsight in rejecting the appellants' claims. *See W.L. Gore*

Appeal No. 1998-1804  
Application 08/668,291

*& Associates v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *In re Rothermel*, 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960). Accordingly, we reverse the rejection of claims 1-4, 6-17 and 19-25.<sup>2</sup>

#### DECISION

The rejections under 35 U.S.C. § 103 of claims 1-4, 6-8, 11, 13-17, 19-21 and 24 over Natarajan in view of Johnstone, claims 9, 10, 22 and 23 over Natarajan in view of Johnstone and

Thein, and claims 12 and 25 over Natarajan in view of

---

<sup>2</sup> The examiner relies upon Thein and Gauci only for limitations in dependent claims and not for any disclosure which remedies the above-discussed deficiency in Natarajan and Johnstone.

Appeal No. 1998-1804  
Application 08/668,291

Johnstone and Gauci, are reversed. The appeal is dismissed as  
to claims 26 and 27.

*REVERSED*

	)	
EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
CHUNG K. PAK	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
TERRY J. OWENS	)	
Administrative Patent Judge	)	

TJO/ki

Appeal No. 1998-1804  
Application 08/668,291

Ira David Blecker  
Intellectual Property Law  
IBM Corporation Dept.  
Bldg. 300-482, 2070 Route 52  
Hopewell Junction, NY 12533-6531